

**Draft Proposed Outreach & Education Actions for Ship Canal/Locks/Lake Union
(by WRIA 8 Public Outreach Committee)**

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record or Model	Level of Financial Commit.
M701	Solid overwater structures that create dark shadows and hiding places for predators	Reduce severity of predation on juveniles	Dock owners, via boat owners, shoreline property owners	<p>Create a boater education campaign. Explain about value of mesh docks, smaller piling sizes, and community docks to both salmon and property owners. (Reduced predation for fish; reduced maintenance for property owners. Highlight added value being able to watching fish swimming under the dock and architectural styling of raised approach bridges).</p> <p>Outreach could be carried out via a combination of mailings sent with boat registration tab renewal or property tax notice (for shoreline property owners), literature at marine, sporting goods, and hardware stores; boat shows; and through workshops to homeowners and marine construction industry. Coordinate outreach through appropriate licensing and tax agencies.</p>	High (for Lake Union)		Variable
M702	Increased predation under older style solid surface docks, or new docks built/remodeled without proper permits and design specs	Expedite permitting to get better compliance and consequently, more salmon friendly shoreline construction	Shoreline property owners, marina operators, houseboat community	Increase public awareness about the joint effort by NOAA Fisheries, Washington Dept. of Fish & Wildlife, US Army Corps of Engineers, US Fish & Wildlife Service to develop more standardized specifications for new and expanded piers. Highlight fact that goal of this effort is to streamline federal/state permitting for piers that meet these specifications.	High		Low
M703	Increased predation in areas with docks and overwater structures, decreased water quality	Reduce predation, remove source of creosote degrading water quality	General public, but especially other shoreline property owners	Increase interpretive signage and media exposure at areas where dock, pilings, and overwater structures have been removed.	High	Salmon Bay Natural Area, (e.g. Azteca Restaurant site)	Low
M704	Rip-rap and shoreline armoring that encourages predator species	Remove and replace with more natural features, encourage more salmon friendly design for new	Shoreline property owners	Offer shoreline property owners a series of shoreline design workshops that cover: natural yard care; shoreline planting design/noxious weed management; alternatives to vertical wall bulkheads; salmon friendly dock design; aquatic weed management; environmentally friendly methods of maintaining boats, docks, decks; porous	Low - Medium	Natural Yard Care Program, WRIA 8 Lakeside Living Lakeshore Property Owner	Medium High

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		construction		paving options.		workshops	
M705	Rip-rap and shoreline armoring that lead to coarse aggregate and steep slopes	Decrease conditions that favor predator species	Construction and design industries	Offer professional workshops to marine contractors and design professionals on more environmentally friendly shoreline design.	High	Wa Assoc. of Landscape Contractors Integrated Pest Mgmt. trainings	Low
M706	Rip-rap and shoreline armoring that encourages predator species	Reduce these conditions and soften shoreline	Boat owners	<p>Expand outreach related to impacts of increased boat speed near shorelines, especially those caused by the new super yachts. Shoreline property owners are reacting by trying to build increasingly bigger and less salmon friendly bulkheads. If there need to be speed limits established and increased regulation within a certain distance of shoreline, boaters will have to better understand the implications of increased speeds caused by larger boats.</p> <p>Coordinate with the Washington State Dept. of Licensing to send messaging through boater registration renewal notices; also have explanation or hyperlink available on DOL website. Also requires coordination with Coast Guard, police, and proper enforcement agencies.</p> <p>Have outreach materials available at gas docks, marinas, and marine supply stores.</p>	Medium - High		Variable with inter-agency cooperation
M707	Lack of riparian vegetation; shorelines lack any vegetation or are predominated by invasives or exotics with low ecological value	Replace with appropriate shoreline vegetation	Local business community	<p>Coordinate with local businesses to sponsor a re-vegetation campaign, incorporating environmental stewardship as part of redevelopment occurring within Ship Canal area. Extend message and sponsorship through signage along shore, as well as retail self-promo (at business's discretion).</p> <p>Promote through media on larger level with articles and recognition, Daily Journal of Commerce, local papers, trade journals, and at business club meetings such as Propeller Club and Chambers of Commerce.</p>	High	Salmon Bay Natural Area; (former Hiram's Habitat Improvement Project), Marine Business Coalition; Improvement Districts; Business Improvement Areas	Low
M708	Water quality	Protect and	Local	Expand and extend Best Management Practices to all	High	Various	Low -

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	degraded by cleaning products/chemicals poured down storm drain or through parking lot cleaning	restore water quality	business community, property management companies	business, especially at service and janitorial levels and through property maintenance techniques. Consider different language options for ESL employees. Further coordinate with employment and temporary agencies. Expand EnviroStars program to include salmon friendly BMPs.		jurisdiction's community, stormwater management, and business outreach programs; KC EnviroStars	Medium
M709	Elevated water temps due to increased impervious areas reduced infiltration and groundwater recharge lower flows	Reduce high water temp that impede juvenile outmigration	General public, especially high water users	Develop marketing campaigns such as <i>Keep Cool, Salmon are Shady Characters</i> . Continue to promote existing "Cold Fish need Love too" (Bellevue Stream Team). Promote cool water as an important benefit of water conservation.	Medium	Bert the Salmon ad campaigns, pro bono ad work, The Campaign for a Drug Free America	Variable. Can be low if get pro bono advertising work
M710	High water temps. lead to increased predation	Reduce water temp by increasing baseflows	General Public, especially high water users	Increase water conservation campaigns promoting the use of more efficient appliances and water use practices. Expand for landscape irrigation purposes. Offer free landscape irrigation audits for high water users.	Low	Water Cents, Smart & Healthy Landscapes	Low
M711	Degraded water quality	Improve and protect water quality	Marinas, sea plane docks, boat yards	Promote use of less toxic materials used for maintenance and repairs.	High	King County Local Hazardous Waste Mgmt. Program	Low - medium
M712	Degraded water quality, chemicals masking smell receptors used to navigate home to spawning grounds	Improve and protect water quality	Landscape contractors, property mgmt. companies	Train groundskeepers and property management companies about water polluting effects of landscape practices. Employ the "pride in workmanship" strategy. Put signs up listing who maintains landscapes and parking lots along the canal and the Locks and the management practices which they employ.	High	Ongoing throughout WRIA	Low - medium
M713	All conditions listed above	Remediate these degraded conditions and protect water quality	Houseboat community, "Liveaboards" on navigable boats, and recreational boaters	Expand outreach about shoreline vegetation, aquatic weed Best Management Practices, and water quality (pump-outs). Messaging should occur through homeowner's association meetings and newsletters. Appeal to "liveaboards," through boater registration.	Medium	Existing work with many houseboat communities (e.g. Mallard Cove).	Low

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(by WRIA 8 Public Outreach Committee)**

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M714	Solid overwater structures that create dark shadows, sudden light changes, hiding places for predators, and force juveniles out into deeper water where more predators lurk	Reduce severity of predation on juveniles, protect schooling behaviors, and reduce disorientation caused by sharp changes in light intensity	Shoreline property owners and dock owners, via boat owners	<p>Promote mutual value of mesh docks, smaller piling sizes, and community docks to both salmon and property owners. (Reduced predation for fish; reduced maintenance for property owners. Highlight added value being able to watching fish swimming under the dock). Outreach could be carried out either by direct mailing to shoreline property owners or via development of a boat owner education campaign. Outreach messages could be sent with boat registration renewal or property tax notice. Augment with literature at marine supply/sporting goods stores, boat shows; and through workshops to homeowners and marine construction industry. Coordinate outreach through appropriate licensing and tax agencies.</p> <p>Coordinate outreach with marine contractors and manufacturers of mesh decking, prisms, light tubes, and other components employing newest technologies.</p>	High	Yes	Variable
M715	Increased predation under solid surface docks built close to water, with large and numerous pilings. Docks replaced or built without proper permitting due to cumbersome requirements and time taken to process.	Expedite permitting to get better compliance and consequently, more salmon friendly shoreline construction	Shoreline property owners, marina operators	<p>Support through public outreach the joint effort by NOAA Fisheries, WDFW, USACOE, USFWS to develop consistent specifications for shoreline modifications such as new or expanded piers and bulkheads. Goal of this effort is for streamlined federal/state permitting for piers that meet these specifications. Message through direct mailings to shoreline property owners or piggyback with property tax notices. This would require coordination with Tax Assessors office.</p> <p>Explore possibility of creating further incentives for dock sharing such as reduced permit fees and super expedited process.</p>	High		
M716	Segmentation of shoreline acting as barrier to habitat forming processes	Re-establish shoreline continuity and encourage sandy beach formation	Shoreline property owners	Promote use of shared docks, buoy anchors, or removable docks. Explore possibility of incentives for dock sharing such as reduced permit fees and super expedited process.	High - Medium	San Francisco Bay and Chesapeake Bay	

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M717	Predation in areas with docks and overwater structures; decreased water quality	Reduce predation, remove source of creosote degrading water quality	General public, but especially other shoreline property owners	Increase interpretive signage and media exposure at areas where dock, pilings, and overwater structures have been removed.	Medium - Low	Nearshore parks, City of Edmonds and future ferry dock relocation, Edmonds.	Low
M718	Lack of marine shoreline vegetation; shoreline armoring and docks that encourage predator species, reduced water quality	Restore marine vegetation; replace hardened shoreline with more natural features; promote more salmon friendly design for new construction	Shoreline Property Owners, marine contractors	<p>Offer shoreline property owners a series of shoreline design workshops that covers: shoreline planting design/noxious weed management; slope stabilization and erosion control using vegetation; natural yard care; porous paving options; alternatives to vertical wall bulkheads; salmon friendly dock design; and environmentally friendly methods of maintaining boats, docks, and decks.</p> <p>Offer professional workshops to marine contractors and design professionals on more environmentally friendly shoreline design.</p>	High	Puget Sound Action Team & WRIA 9 nearshore property owner workshops; WRIA 8/KCD Lakeside Living Lakeshore property owner workshops; People for Puget Sound Nearshore Pods Program, Natural Yard Care Neighborhoods Program	Medium High
M719	Shoreline armoring that prevents beach accretion by limiting sediment source	Reduce shoreline hardening; connect sediment source to Nearshore	Shoreline property owners	Create an education campaign to explain to shoreline property owners the problems associated with vertical wall bulkheads. Besides workshops described above, use direct mailings to shoreline prop owners, guided beach walks; and messaging with property tax notices, and websites.	High - Medium	Puget Sound Action Team, People for Puget Sound	Low
M720	Lack of pocket estuaries	Restore and enhance creek mouths	Shoreline Property owners, real estate professionals, general public	Expand outreach about value of estuaries for rearing, food, shelter, and salinity adjustments for migrating fish. Encourage private property owners to enlist help of community stewardship organizations to help restore and enhance creek mouths, and to provide means for ongoing education. Build on/modify the Adopt-a-Park system to adopt a creek mouth.	High -	Seattle Creek Stewardship Program, Seattle Adopt-a-Park, Lake Forest Park Stewardship Foundation,	

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				Appeal to real estate business community to help foster this ethic of community stewardship. Explore possibility of involving neighborhood schools.		various city stream teams	
M721	Decrease in eelgrass beds due to shoreline armoring (impeding sediment supply), overhanging docks/structures; pollution, propeller disturbance, turbidity, dredging, and filling	Restore eelgrass bed and source of refuge, food, and nutrient supply	Shoreline property owners, boaters, community, youth	<p>Expand outreach about value of eelgrass beds as juvenile source of food and habitat and the negative effects that docks, overwater structures, and bulkheads have on the eelgrass.</p> <p>Encourage combined docks or mesh/nearshore friendly designs that let more light down into water and impede less sediment.</p> <p>Involve community and youth in eelgrass replantings and monitoring studies.</p>	High	US EPA's National Estuary Program	Low
M722	Lack of riparian vegetation; shorelines lack vegetation or are predominated by invasives or exotics with low ecological value	Replace with appropriate shoreline vegetation	Local business community and shoreline property owners	<p>Coordinate with local businesses to sponsor a shoreline revegetation campaign, incorporating environmental stewardship as part of shoreline commerce. Extend message (and sponsorship) through signage along shore, in-store or restaurant promotions (at business's discretion), and media recognition.</p> <p>Promote on larger level with recognition, Daily Journal of Commerce, local papers, trade journals, Chambers of Commerce.</p>	Medium	Salmon Bay Natural Area, Hiram's at the Locks Habitat Improvement Project, Seattle Local Improvement Districts and Business Improvement Areas.	Low
M723	Loss of marsh and wetland	Protect marsh and wetland habitat	General public	Increase interpretive signage at Golden Gardens and public wetland sites. Encourage school field trips.	Medium	Golden Gardens Park, North Creek Regional Park	
M724	Railroad as impediment to feeder bluffs and habitat forming processes	Where ever possible protect source of sediment formation	Shoreline (largely Railroad) and upland bluff property owners, general public, youth	Develop an education awareness campaign: <i>Have you fed your beach today?</i> Define what feeder bluffs are. Challenge the notion that all erosion is a bad thing.	Medium - Low		Variable
M725	Water quality degraded by toxics	Protect and improve water	Home and car owners, storm	Promote use of more Low Impact Development and innovative storm water management solutions for dealing	High	Seattle SEA Streets, High	Variable, but

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	and metal fines	quality by mimicking natural hydrology	water management planning, staff, developers	with runoff by using more small scale natural drainage systems, reducing impervious surface area, and increasing amount of vegetative cover.		Point Development, Cities of Bellingham and Portland	much cheaper than traditional solutions
M726	Water quality degraded by toxins and heavy metals	Reduce use of petroleum combustion engine cars	General public, but especially car owners, drivers, and students	<p>Make better known the connection between water pollution and the everyday act of driving cars. Pose questions such as "What happens to car exhaust – all the things that come out of the tailpipes? Where do worn tires, breaks, and other car parts go? Expand outreach to school Driver's Ed programs (the future car buyers of our watershed) and school science curricula.</p> <p>Coordinate messaging with Puget Sound Air Quality Authority. Enlist help of the auto industry to help subsidize outreach by touting what they are doing to reduce emissions and capture combusted aromatic hydrocarbons.</p> <p>Support Commute Trip Reduction Programs.</p>	High	<p>Water Quality Consortium Poster Series, PSAT, Business for Clean Water</p> <p>Washington Forest Protection Association</p>	Medium
M727	Water quality degraded by cleaning products/chemicals poured down drain (tossed directly into storm drain or in parking lot)	Improve and protect these conditions	Local business community, property managers	<p>Educate and support businesses, property management companies, and homeowners associations on stormwater management practices, specifically related to parking lot cleaning, storm drain maintenance and road cleaning.</p> <p>Consider different language options for ESL employees. Further coordinate with employment and temp agencies.</p> <p>Expand EnviroStars program to include salmon friendly BMPs.</p>	High - Medium	Various jurisdiction's community, storm water management, and business outreach programs	Variable
M728	Improve and protect water quality	Improve and protect water quality	Boat yards, sea plane docks, and marinas	Promote use of less toxic materials for cleaning and maintenance. Focus more efforts at marinas and places where 'do-it-yourselfers' would be since they may be less aware of impacts and are not as regulated as marine industries.	Medium	King County LHWMP, Puget Sound Keeper, Puget Sound Alliance	Low-medium
M729	Degraded water quality, chemicals masking smell receptors used to navigate home to	Improve and protect water quality	Landscape contractors, property management companies,	Train groundskeepers, Parks Departments, and property management companies about water polluting effects of landscape practices. Employ the "pride in workmanship" strategy by placing signs that list who (the company, dept. or agency that) maintains landscapes/parking lots	Medium	Ongoing throughout WRIA. King County Local Hazardous	Low-medium

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	spawning grounds and degrading eel grass beds			along shorelines and the management practices which they employ.		Waste Mgmt Program, Seattle Green Gardening. King County LHWMP EnviroStars recognizes businesses that adopt BMPs	
M730	All above conditions	Protect and restore nearshore salmon habitat and habitat creating processes	Shoreline property owners	Distribute printed materials such as the <i>Shoreline Property Guidebook</i> (also available online) to all shoreline property owners in order to provide household and landscape best management practices, as well as information about opportunities for involvement in community stewardship projects.	High- - Medium	Puget Sound Action Team	Low